

## PREVALENCE OF DEPRESSION IN PRENATAL AND POSTNATAL PERIOD

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### Abstract

**Objective:** To assess the prevalence of depression in prenatal and postnatal periods.

**Methods:** A cross-sectional study was conducted with the approval of the Ethical Institutional Review Board against ref. no. TUF/IRB/321/24. Through purposive sampling, a sample of 94 participants that are categorized into prenatal and postnatal patients, 47 participants included for each post-natal and prenatal period were collected from Outpatient Department and Wards of District Headquarter Faisalabad, Allied Hospital Faisalabad and Madinah Teaching Hospital Faisalabad. They were analyzed using Edinburgh Peri/Postnatal Depression Scale and Patient Health Questionnaire.

**Results:** Prevalence of depression in prenatal and post-natal period was 11.59% and 13.02% respectively while Patient Health Questionnaire shows 10.02% for prenatal period and 10.89% for postnatal period.

**Conclusion:** It has been concluded that postnatal periods had more depression as compared to the prenatal period as there were remarkable differences in symptoms and severity of depression in prenatal and postnatal period.

### INTRODUCTION

Depression is a mood disorder affecting pregnant and postpartum women. Pregnancy is a period of physical, emotional, hormonal and social fluctuations that expose women to stress and psychological problems. Some women may find pregnancy exciting, rewarding and satisfying. However, others may experience changes in their health such as the development of anxiety. Prenatal and postpartum depressions are distinct phases in a female's life that are influenced via various factors.<sup>1</sup> This condition encompasses prenatal depression that occurs during pregnancy and postnatal depression which arises after childbirth.<sup>2</sup> Prenatal depression has ties to increased postpartum depression risk.<sup>3</sup> It presents various adverse outcomes such as reduced breastfeeding initiation, preterm

birth, fetal mortality, and fetal growth restriction.<sup>4</sup> During pregnancy, the body undergoes anatomical and physiological changes to meet the fetus growth requirements, metabolic needs and to prepare for delivery. Early in pregnancy, these alterations start, peak during menstruation or childbirth, and recover to prenatal levels in the weeks following delivery.<sup>5</sup> Postpartum depression (PPD) is caused by hormonal changes after childbirth, lack of sleep, and the strain of adjusting to new obligations. PPD is a non-psychiatric condition that can start or persist after giving birth. The same risk factors that are associated with prenatal depression also apply here: a history of depression, lack of self-confidence, stressful life

experiences, marital pressure, and insufficient societal support.<sup>6</sup>

Increased parity, prior low back pain, psychological stress, obesity, young motherhood, low educational attainment, early menarche, physically demanding work, and caesarean birth are risk factors.<sup>7</sup>

Pregnant women with a history of depression face 50% to 60% risk of experiencing depression again. Prenatal anxiety disorder is quite common in PPD patients.<sup>8</sup> Additionally, it deleteriously affects them increasing their risk of mental and physical illnesses. It also inhibits their growth, impairing their self-control, lowering their self-esteem, and causing behavioral issues.<sup>9</sup>

### Material and methods

A cross-sectional study was conducted after approval from the Ethical Institutional Review Board against ref. no. TUF/IRB/321/24. Participants were recruited from Madinah Teaching Hospital (MTH), District Headquarter (DHQ) and Allied hospital Faisalabad from August 2024 to December 2024. Sample of 94 participants were collected through purposive sampling. Prior to data collection, Informed consent was obtained from all the participants. Screening was done by using inclusion and exclusion criteria. The Inclusion criteria include prenatal period i.e. 3rd trimester, postnatal period i.e. up to 6 weeks after delivery, age group 18-30 years. The exclusion criteria include previous history of depression during pregnancy, history of mental

illness, mental retardation, history of taking anti-depressive drugs, who are unable to communicate or speak, history of complications during pregnancy like umbilical cord prolapse, fetal distress, premature rupture of membrane, fetal anomalies, preterm labor. The study aims to investigate the prevalence and severity of depression in the prenatal and postnatal period. Data was collected through Edinburgh Peri/Postnatal Depression Scale (EPDS) and Patient Health Questionnaire (PHQ-9).

EPDS is a scale that consists of 10 screening questions that can be used to determine whether a woman has symptoms of depression in pregnancy or in postpartum period up-to 6-8 weeks. The sensitivity of EPDS is 87.95% and its specificity is 93.86%. The questions on this scale relate to a variety of clinical depression symptoms, including guilt, sleep disturbance, low energy and suicidal thoughts. Assessment was done by final score, which is determined by adding the scores for all ten questions respectively.

PHQ-9 scale consists of 9 questions that are used to monitor the severity of depression. The sensitivity of PHQ-9 is 88% and its specificity is 88%.<sup>11</sup> This scale assesses the severity of symptoms of depression, guilt, suicidal thoughts, sleeplessness, exhaustion, appetite, focus, and psychological changes. Patients rate how much they have been disturbed by each symptom over the past 2 weeks. The possible response options include 0 (not at all), 1 (several days), 2 (more than half the days), and 3 (almost every day).

### Results:

Table 1 shows mean (St. Deviation) of participant's age in prenatal period was 26.76 (3.08) while in postnatal period was 26.63 (3.04).

| Table 1: Descriptive Statistics of Participant's Age |                      |                        |                         |
|--|----------------------|------------------------|-------------------------|
| Variable   | Constructs           | Prenatal Period (n=47) | Postnatal Period (n=47) |
| Age  | Mean (St. Deviation) | 26.76 (3.08)           | 26.63 (3.04)            |
|  | Minimum              | 18                     | 18                      |
|  | Maximum              | 30                     | 30                      |

Table 2 depicts descriptive statistics of EPDS. Participants who are more able to laugh are more in prenatal (51.5%) than in postnatal participants (36.2%). Those who enjoy more are more in prenatal (53.2%) than in postnatal participants (38.3%). Those who have never blamed themselves when things went wrong are more in postnatal (38.3%) than

in prenatal participants (27.7%). Those who were more anxious or worried occasionally for no reason are more in postnatal (51.1%) than in prenatal participants (40.4%). Participants who felt scared or panicky for not very good reasons are more in the postnatal period (44.7%) than in prenatal participants (34.0%). Those who have not been coping well are

more in postnatal period (27.7%) than in the prenatal period (17.0%). Participants who felt more unhappy in sleeping problems are more in postnatal (23.4%) than in prenatal participants (4.3%). Those who felt more sad and miserable are more in postnatal (40.4%) than in prenatal (27.7%). Participants who were so

unhappy most of the time that they have been crying were more in postnatal (53.2%) than in prenatal period (27.7%). Those who have never been thought of harming themselves are more in postnatal (89.4%) than in prenatal participants (80.9%).

**Table 2: Descriptive Statistics of Edinburgh Peri/Postnatal Depression Scale (EPDS)**

| <b>I have been able to laugh and see the funny side of things</b> |                        |                        |
|---|------------------------|------------------------|
|   | Prenatal Period        | Postnatal Period       |
|   | Frequency (Percentage) | Frequency (Percentage) |
| 0. As much as I always could                                      | 24 (51.5%)             | 17 (36.2%)             |
| 1. Not quite so much now  | 14 (29.8%)             | 18 (38.3%)             |
| 2. Definitely not so much now                                     | 8(17.0%)               | 12 (25.5%)             |
| 3. Not at all   | 1 (2.1%)               | 0 (0%)                 |
| <b>I have looked forward with enjoyment to things</b>             |                        |                        |
| 0. As much as I ever did  | 25 (53.2%)             | 18 (38.3%)             |
| 1. Rather less than I used to                                     | 13 (27.7%)             | 13 (27.7%)             |
| 2. Definitely less than I used to                                 | 7 (14.9%)              | 14 (29.8%)             |
| 3. Hardly at all  | 2 (4.3%)               | 2 (4.3%)               |
| <b>I have blamed myself unnecessarily when things went wrong</b>  |                        |                        |
| 0.No, never   | 13(27.7%)              | 18(38.3%)              |
| 1. Not very often   | 13(27.7%)              | 13(27.7%)              |
| 2. Yes, some of the time  | 14(29.8%)              | 11(23.4%)              |
| 3. Yes, most of the time  | 7(14.9%)               | 5(10.6%)               |
| <b>I have been anxious or worried for no for no good reason</b>   |                        |                        |
| 0. No, not all  | 9(19.1%)               | 4(8.5%)                |
| 1. Hardly ever  | 4(8.5%)                | 4 (8.5%)               |
| 2. Yes, sometimes   | 19(40.4%)              | 24 (51.1%)             |
| 3. Yes, very often  | 15(31.9%)              | 15 (31.9%)             |
| <b>I have felt scared or panicky for no very good reason</b>      |                        |                        |
| 0. No, not at all   | 17(36.2%)              | 11(23.4%)              |
| 1. No, not much   | 9(19.1%)               | 9(19.1%)               |
| 2. Yes, sometimes   | 16(34.0%)              | 21(44.7%)              |

|   |           |            |
|---|-----------|------------|
| 3. Yes, quiet a lot   | 5(10.6%)  | 6(12.8%)   |
| <b>Things have been getting on top of me</b>                      |           |            |
| 0. No, I have been coping as well as ever                         | 18(38.3%) | 14(29.8%)  |
| 1. No, most of the time I have coped very well                    | 19(40.3%) | 19(40.0%)  |
| 2. Yes, sometimes I haven't been coping as well as usual          | 8(17.0%)  | 13(27.7%)  |
| 3. Yes, most of the time I haven't been able cope                 | 2(4.3%)   | 1(2.1%)    |
| <b>I have been so unhappy that I have had difficulty sleeping</b> |           |            |
| 0. No, not at all   | 20(42.6%) | 15 (31.9%) |
| 1. Not very often   | 6(12.8%)  | 13(27.7%)  |
| 2. Yes, sometimes   | 19(40.4%) | 8(17.7%)   |
| 3. Yes, most of the time  | 2(4.3%)   | 11 (23.4%) |
| <b>I have felt sad or miserable</b>                               |           |            |
| 0. No, not at all   | 6(12.8%)  | 5(10.6%)   |
| 1. Not very often   | 11(23.4%) | 11(23.4%)  |
| 2. Yes, quite often   | 17(36.2%) | 12(25.5%)  |
| 3. Yes, most of the time  | 13(27.7%) | 19(40.4%)  |
| <b>I have been so unhappy that I have been crying</b>             |           |            |
| 0. No, never  | 10(21.3%) | 9(19.1%)   |
| 1. Only occasionally  | 6(12.8%)  | 6(12.8%)   |
| 2. Yes, quite often   | 18(38.3%) | 7(14.9%)   |
| 3. Yes, most of the time  | 13(27.7%) | 25(53.2%)  |
| <b>The thought of harming myself has occurred to me</b>           |           |            |
| 0. Never  | 38(80.9%) | 42(89.4%)  |
| 1. Hardly ever  | 4(8.5%)   | 2(4.3%)    |
| 2. Sometimes  | 3(6.4%)   | 3(6.4%)    |
| 3. Yes, quite often   | 2(4.3%)   | 0(0%)      |

Table 3 shows the results of PHQ-9 scale in which out of 94 participants, participants who have little interest or pleasure in doing something for several days are

more prenatal (40.4%) than in postnatal period (34.0%). Those who felt more down, depressed and hopeless for several days are more in postnatal

(44.7%) than prenatal (42.6%). Those having more trouble staying asleep or sleeping too much for several days are more in postnatal (31.9%). Feeling more tired are prevalent in postnatal (48.9%) than in prenatal (38.3%) period. Those having more poor appetites or over-eating for several days are more in prenatal (40.4%) than in postnatal period (27.7%). Reported more feeling of neither badly about themselves nor that they had let themselves or their family down is

more in postnatal (72.3%) than in prenatal (70.2%). Participants who have not at all trouble concentrating in things are more in postnatal (40.4%) than in prenatal (38.3%). Those who have not at all trouble in moving or speaking are more in prenatal (36.2%) than in postnatal (31.9%). Participants who did not think they would be better off dead at all were (80.9%) in both prenatal and postnatal period.

**Table 3: Descriptive Statistics of Patient Health Questionnaire (PHQ-9)**

|  | Prenatal Period        | Postnatal Period       |
|--|------------------------|------------------------|
|  | Frequency (Percentage) | Frequency (Percentage) |
| <b>Little interest or pleasure in doing things</b>             |                        |                        |
| 0. Not at all  | 14 (29.8%)             | 14 (29.8%)             |
| 1. Several days  | 19 (40.4%)             | 16 (34.0%)             |
| 2. More than half of the days                                  | 8 (17.0%)              | 12 (25.5%)             |
| 3. Nearly everyday   | 6 (12.8%)              | 5 (10.6%)              |
| <b>Feeling down, depressed, or hopeless</b>                    |                        |                        |
| 0. Not at all  | 8 (17.0%)              | 6 (12.8%)              |
| 1. Several days  | 20 (42.6%)             | 21 (44.7%)             |
| 2. More than half of the days                                  | 13 (27.7%)             | 11 (23.4%)             |
| 3. Nearly everyday   | 6 (12.8%)              | 9 (19.1%)              |
| <b>Trouble falling or staying asleep, or sleeping too much</b> |                        |                        |
| 0. Not at all  | 14 (29.8%)             | 8 (17.0%)              |
| 1. Several days  | 14 (29.8%)             | 15 (31.9%)             |
| 2. More than half of the days                                  | 12 (25.5%)             | 13 (27.7%)             |
| 3. Nearly everyday   | 7 (14.9%)              | 11 (23.4%)             |
| <b>Feeling tired or having little energy</b>                   |                        |                        |
| 0. Not at all  | 2 (4.3%)               | 2 (4.3%)               |
| 1. Several days  | 9 (19.1%)              | 13 (27.7%)             |
| 2. More than half of the days                                  | 18 (38.3%)             | 9 (19.1%)              |
| 3. Nearly everyday   | 18 (38.3%)             | 23 (48.9%)             |
| <b>Poor appetite or over-eating</b>                            |                        |                        |
| 0. Not at all  | 9 (19.1%)              | 7 (14.9%)              |
| 1. Several days  | 19 (40.4%)             | 13 (27.7%)             |
| 2. More than half of the days                                  | 12 (25.5%)             | 15 (31.9%)             |
| 3. Nearly everyday   | 7 (14.9%)              | 12 (25.5%)             |

|  |            |            |
|--|------------|------------|
| <b>Feeling bad about yourself or that you are a failure or have let yourself or your family down</b>   |            |            |
| 0. Not at all  | 33(70.2%)  | 34 (72.3%) |
| 1. Several days  | 7 (14.9%)  | 9(19.1%)   |
| 2. More than half of the days  | 5 (10.6%)  | 3 (6.4%)   |
| 3. Nearly everyday   | 2 (4.3%)   | 1 (2.1%)   |
| <b>Trouble concentrating in things, such as reading the newspaper or watching television</b>   |            |            |
| 0. Not at all  | 18 (38.3%) | 19 (40.4%) |
| 1. Several days  | 12 (25.5%) | 15 (31.9%) |
| 2. More than half of the days  | 13 (27.7%) | 10 (21.3%) |
| 3. Nearly everyday   | 4 (8.5%)   | 3 (6.4%)   |
| <b>Moving or speaking so slowly that other people could have noticed. Or the opposite being so fidgety or restless that you have been around a lot more than usual</b> |            |            |
| 0. Not at all  | 17 (36.2%) | 15 (31.9%) |
| 1. Several days  | 16 (34.0%) | 14 (29.8%) |
| 2. More than half of the days  | 9 (19.1%)  | 11 (23.4%) |
| 3. Nearly everyday   | 5 (10.6%)  | 7 (14.9%)  |
| <b>Thoughts that you would be better off dead, or off hurting yourself</b>   |            |            |
| 0. Not at all  | 38 (80.9%) | 38 (80.9%) |
| 1. Several days  | 5 (10.6%)  | 5 (10.6%)  |
| 2. More than half of the days  | 3(6.4%)    | 3 (6.4%)   |
| 3. Nearly everyday   | 1 (2.1%)   | 1 (2.1%)   |

### Discussion:

The result of current study indicates that 27.7% of females felt depressed or gloomy during the prenatal period and 40.4% of females felt the same way during the postnatal period. This illustrates that prevalence of post-natal depression is higher than prenatal period and the result of this study were supported by another prospective cross-sectional study showing postpartum depression was present in 17.6% of cases.<sup>12</sup>

Current study findings suggest that 51% postpartum female have been anxious and worried as compared to 40.4% females in prenatal period. The results correlate with prospective cross-sectional study using the EPDS and Depression Anxiety and Stress Scale (DASS-21) have sample size of 353. Prenatal depression was in present in 19% participants and PPD was present in 22% of cases.<sup>13</sup>

The prevalence rate for depression in prenatal period was 11.59% and 13.02% in postnatal period by EPDS while PHQ-9 shows 10.02% for prenatal period and 10.89% for postnatal period. Findings of this study align with another cross-sectional study showing 17% prevalence of depressive symptoms during late pregnancy was 18% and 6–8 weeks postnatal was 13%. A correlation between antenatal and postnatal depressive symptoms was found in that study.<sup>14</sup>

Prevalence of feeling depressed in postnatal females was 19.1% and those who felt miserable were 40.4%. Results of current study are consistent with another cross-sectional structured interview study of mental health. Depressive symptoms were measured by the EPDS and mental distress by the Self Report Questionnaire-20 (SRQ-20). Prevalence of depressive symptoms in the postnatal period was 4.9% and that of mental distress was 3.1%.<sup>15</sup>



## Conclusion:

This study concludes that the postnatal period is associated with a higher incidence of depression compared to the prenatal period. This is an indication

for routine screening of women in the prenatal period to avoid, recognize and manage postpartum depression and its effects on mothers and their developing children.

## Author Contribution

|               |   |
|---------------|---|
| Izza Ayub     | Conception or design of the work<br>Acquisition, Analysis, or Interpretation of data for the work<br>Revising it critically for important intellectual content<br>Final approval of the version to be published |
| Aleena Naveed | Conception or design of the work<br>Drafting the work<br>Acquisition, Analysis, or Interpretation of data for the work  |
| Mulaika Majid | Conception or design of the work<br>Drafting the work<br>Acquisition, Analysis, or Interpretation of data for the work  |
| Uswa Saeed    | Conception or design of the work<br>Drafting the work<br>Acquisition, Analysis, or Interpretation of data for the work  |

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